

Ahmed, Rizwan Raheem; Vveinhardt, Jolita; Streimikiene, Dalia; Awais, Muhammad

## Article

# Mediating and Marketing Factors Influence the Prescription Behavior of Physicians: An Empirical Investigation

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## MEDIATING AND MARKETING FACTORS INFLUENCE THE PRESCRIPTION BEHAVIOR OF PHYSICIANS: AN EMPIRICAL INVESTIGATION

**Rizwan Raheem Ahmed<sup>1</sup>, Jolita Vveinhardt<sup>2</sup>, Dalia Streimikiene<sup>3\*</sup> and Muhammad Awais<sup>4</sup>**

<sup>1)4)</sup> *Indus University, Gulshan, Karachi, Pakistan*

<sup>2)3)</sup> *Lithuanian Sports University, Kaunas, Lithuania*

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**Abstract**

The authors present general review of the literature and the results of an empirical research on the subject. A cross-sectional questionnaire-based survey was conducted, being answered by 350 respondents: mix of graduate and post graduate doctors of private and public hospitals of Karachi City, and pharmaceutical personnel (mix of sales and marketing) of national and multinational pharmaceutical companies operating in Pakistan. To test hypothesis, structural equation modelling (SEM) was employed using AMOS 7 software package. As data are normally distributed, maximum likelihood method of estimation was used. Factorial ANOVA also enables us to examine the interaction effect between the factors. The results from factorial ANOVA test all the hypotheses of model, and results were declared significant at  $p < 0.05$ . Findings are interesting as they establish association between variables (scientific literatures, promotional material, regular follow up, CMEs & conferences, personalized activities) and prescription behavior of doctors mediated by strong phenomenon of medical representative PR and brand image of a company/product in changing the prescription behavior of doctors. Based on the results of this study, the pharmaceutical companies can devise better marketing strategies keeping in view of these mediating effects. The article presents only two mediating and five marketing factors, whereas, more marketing and mediating variables can be added and tested, so, in future this gape can be overcome by other researchers. Moreover, a larger sample size could be applied and the scope of study can be enhanced.

**Keywords:** prescription behaviour, mediating factors, marketing variables.

**JEL Classification:** M30; M31; M39

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\* Corresponding author, **Dalia Streimikiene** - [dalia.streimikiene@lei.lt](mailto:dalia.streimikiene@lei.lt)

## Introduction

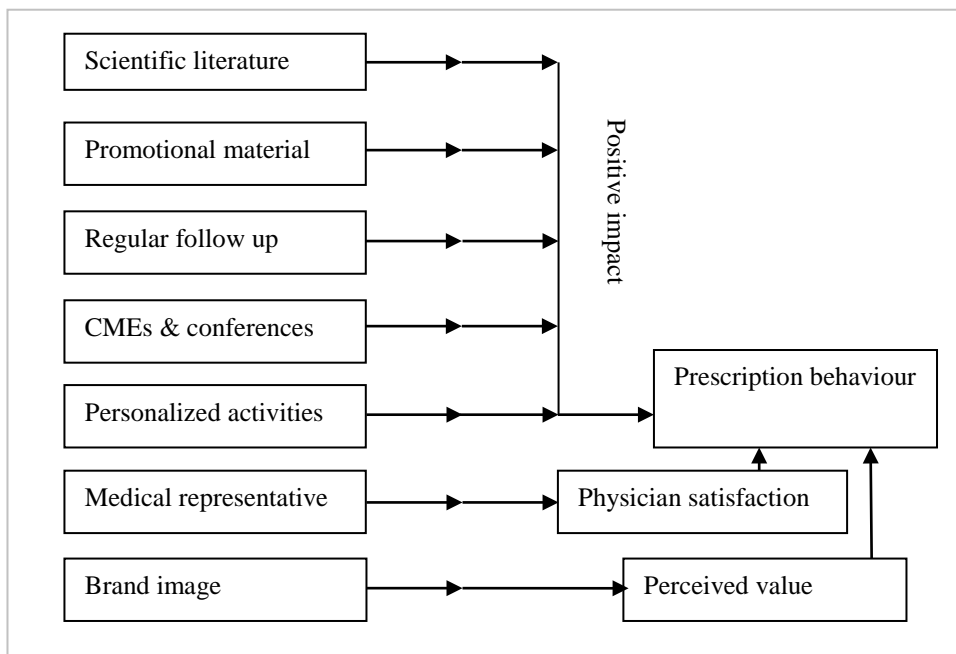
*Relevance and novelty of the research.* A fairly large number of research papers are available on marketing mix and prescription behavior of physicians but hardly a few papers available on this topic. The novelty of the research is revealed in the fact that relationship of mediating and marketing factors together influence the prescription behavior of a physician.

The authors who have carried out the research of a similar nature have found that perceived value is a critical antecedent to physician satisfaction. The results of the research have shown that price, place and promotion are important predictors of perceived value, and perceived value has a strong positive relationship with satisfaction. According to the authors, marketing mix strategy drives perceived value which in turn drives physician satisfaction, and perceived value partially mediates the relationship between marketing mix strategy and physician satisfaction (Murshid et al., 2014).

Marketing is, as in other industries is the driving force in pharmaceutical industry (Lexchin, 1992). Similar to other industries, the main objective of pharmaceutical marketing is to increase the profitability of the organization by accommodating the needs, wants and ultimately satisfaction of consumers (Sattar and Maqsood, 2003). The physician prescription behavior is the real thought for all the pharmaceutical organizations (Wazana, 2000). Marketing mix strategies are considered the needed tools used by the pharmaceutical companies to influence physician's behavior (Sultana et al., 2011). Physicians' prescription behaviour is a wide discourse in pharmaceutical marketing research, where it is searched for optimal solutions. The aim of a variety of marketing strategies is customer satisfaction, but the utmost success is achieved by combining different strategies. One of the results of the search for competitive higher value is a so-called marketing mix strategies model (4PS) (McCarthy, 1964; Shaw and Jones, 2005; Osborne and Ballantyne, 2012; Verbauskienė, Gresienė, 2014). The marketing mix strategy (hereafter MMS) is relevant in many business areas, including medicine and pharmaceuticals (Karayanni and Georgi, 2012; Su et al., 2013; etc.). According Basara (1994), consumer-directed pharmaceutical marketing initiatives are only going to expand in number and complexity. The studies, which aim at understanding the relationship of physicians' motivation with the marketing strategies (Basara, 1996; Taneja, 2008; etc.) and physicians' prescription behaviour (Basara, 1994; Handa et al., 2013; etc.) make a significant part in these strategies. According Handa et al. (2013), pharmaceutical firms spend a significant amount of their budget on promotions. Thus, it becomes imperative to study the perception of physicians, at whom a major share of these promotional efforts is targeted. Various studies have examined physician prescription behaviour as an impact of detailing activities of pharma salespersons and marketing mix variables deployed, with little emphasis on the network connectedness aspects of the physician-salesperson dyad, and its impact on the physician prescription behaviour (Singh, 2008). Furthermore, marketing science has long been concerned with the question of the extent to which customer satisfaction leads to customer retention and, subsequently, to a positive effect on profits. Most of the behaviour-driven explanations posit a generally positive relationship between the two (Rese, 2003). The problem of satisfaction of physicians making prescriptions, directly related to ensuring and maintaining customer loyalty, continues to be a relevant issue in this area. Some studies (e.g. Li and Green, 2011) suggest taking into account the role of the indirect effects in MMS, affecting the physicians' prescription behaviour. However, when evaluating different strategies used by

pharmaceutical companies, the relevant problem of application of MMS is highlighted, ensuring the long-term satisfaction of physicians making prescriptions, as there is still a lack of more extensive research. Therefore, the aim of this research is to determine what influence the indirect factors have on the relationship between MMS and physicians' prescription behaviour.

In this section we will briefly introduce the framework and hypotheses. On the basis of the analysis of theoretical literature the conceptual model of the influence mediating and marketing factors on the prescription behaviour of physicians, which is presented in Figure no. 1, was developed. The model highlights the factors, the combinations of which that could have a positive impact on the prescription behaviour of physicians.



**Figure no. 1: Conceptual Model**

We therefore hypothesize:

*H1a:* There is significant positive impact of scientific literature on prescription behavior.

*H1b:* There is significant positive impact of promotional material on prescription behavior.

*H1c:* There is significant positive impact of regular follow up on prescription behavior.

*H1d:* There is significant positive impact of CMEs & conferences on prescription behavior.

*H1e:* There is significant positive impact of personalized activities on prescription behavior.

Since the presence of Medical Representative between the defined variables, which are essential or they are the triggering factors for prescription behavior and the doctor's prescription habit or behavior. Therefore, importance of personal PR of representative also

plays a vital role for changing or altering the prescription behavior of a doctor. So, Meaningful appraisal of this concept necessitates following hypotheses:

*H2a:* Medical representative PR mediates relationship amongst scientific literature on prescription behavior.

*H2b:* Medical representative PR mediates relationship amongst promotional material on prescription behavior.

*H2c:* Medical representative PR mediates relationship amongst regular follow up on prescription behavior.

*H2d:* Medical representative PR mediates relationship amongst CMEs and conferences on prescription behavior.

*H2e:* Medical representative PR mediates relationship amongst personalized activities on prescription behavior.

Since the brand image of the company and the brand image of a product also plays a vital role for changing or altering the prescription behavior for a doctor. Therefore, brand image of a company/product also a meaningful mediator amongst the defined variables, which are essential or they are the triggering factors for prescription behavior and the doctor's prescription habit or behavior, this concept also necessitates following interdependent hypotheses:

*H3a:* Brand image of a company/product mediates relationship amongst scientific literature on prescription behavior.

*H3b:* Brand image of a company/product mediates relationship amongst promotional material on prescription behavior.

*H3c:* Brand image of a company/product mediates relationship amongst regular follow up on prescription behavior.

*H3d:* Brand image of a company/product mediates relationship amongst cmes and conferences on prescription behavior.

*H3e:* Brand image of a company/product mediates relationship amongst personalized activities on prescription behavior.

*Methods of research:* analysis and synthesis, comparison of scientific literature, collection of data, extraction of results through statistical modelling with the help of SPSS and interpretations of the results.

### **1. Theoretical approach**

Perceived value (mediating effect). Perceived value or mediating effect, as the perception of the customer of what he gets, affecting customer satisfaction, is recognised in the marketing strategies of various business areas (Anderson and Gerbing 1988; Kim and Damhorst, 2009; Lai, 2014; etc.; Edu et al, 2014). According to Sánchez-Fernández and Iniesta-Bonillo (2007), the nature of perceived value is complex and multi-dimensional. Moreover, the concept of perceived value implies an interaction between a consumer and a product, value is relative by virtue of its comparative, personal, and situational nature, it is

preferential, perceptual, and cognitive-affective in nature. Perceived value, as one of the variables of advertising promoting purchases (Ashton et al., 2010; Byun and Mann, 2011; etc.), is significant as it mediates between the quality of a product or service (Kim and Damhorst, 2009), price, reputation and customer satisfaction (Petrick, 2004). The relation has been found between perceived value and perceived risk (Agarwal and Teas, 2001), and brand (Ashton et al., 2010), also the perceived value significantly predicted behavioural intention (Lee et al., 2012), therefore, it is also treated as a general measure of perceived possible loss. In addition, it was found that among the components of physician interactions, setting goals with patients is particularly important, as this was significantly associated with the patient being more hopeful about future health (Beusterien et al., 2013). Therefore, on the basis of studies carried out in the various business areas, mediating effect of perceived value refers to the way the physician evaluates the perceived quality and perceived loss of the medicine prescribed to patients based on future loss perceived by his patients and the quality which is perceived when continuing to use the medicine.

*Physician Satisfaction.* Wang and Wallendorf (2006) note that the consumer satisfaction literature has not, for the most part, integrated individual values into the product evaluation process. Yet a comprehensive understanding of consumer satisfaction can best be attained by including both consumer and product factors. Satisfaction can be classified as transaction specific satisfaction (Olsen and Johnson, 2003; Gelbrich and Roschk, 2011; etc.) and cumulative satisfaction / post-use or consumption satisfaction (Johnson and Fornell, 1991; Anderson and Fornell, 1993; Cissé-Depardon and N'Goala, 2009; etc.). Transaction-specific satisfaction dominated the marketing and consumer behaviour literature up through the early 1990s (Olsen and Johnson, 2003). Different meanings of customer satisfaction are distinguished during the debate. According to Gelbrich and Roschk (2011), cumulative satisfaction is a stronger predictor of loyalty than transaction-specific satisfaction. An alternative argument is that the difference between the transaction-specific and cumulative constructs is minor compared to the difference between customers who do or do not have a reason to complain and actively re-evaluate the fairness of the exchange relationship (Olsen and Johnson, 2003). Johnson and Fornell (1991) maintain that cumulative satisfaction is a customer's evaluation of the total consumption experience with a product or service to date. It is argued that the significance of cumulative satisfaction increases over time (Chiou and Droge, 2006). Moreover, general consumer's experience is added, and in this context cumulative satisfaction may be perceived as a part of the overall satisfaction of the physician prescribing medicine, as a consumer, that ensures loyalty. The customer experiences the service through the marketing mix; the critical elements in the services marketing mix that influence customer expectations are place, physical evidence, participants, and process. The customer's experience of the service, the feelings, and perceptions have a pervasive influence on attracting new customers and retaining existing customers (Yelkur, 2000). Perceived value is a significant dimension, influencing future intentions and loyalty (Gruen et al., 2005), it is influenced ahead of the adoption process by its perceived benefits but not by its perceived sacrifices (Rivière, 2014).

*Prescription Behavior.* Leo and Kangis (2000) examine and presented how the medical doctors decide about their prescription pattern of different medicines. According to these authors, of particular interest is the assessment of the extent to which behaviour is entirely volitional and thus completely under the physician's control. This would determine the extent to which external stimuli, such as communications from the pharmaceutical industry and the media, have any influences or not. The analysis of the influence of different factors

has found that prediction of intended prescription behavior increases significantly when behavioural control is added to the measurements of attitude and subjective norm. In circumstances of high behavioral control, the theory of planned behaviour seems to collapse in favour of the theory of reasoned action (Leo and Kangis, 2000).

In another research Leo and Kangis (2002) presented a report on the evaluation of two models, of their ability to explain the influence of cost containment measures of governments and sick funds on the prescription behaviour of physicians. Real prescription behaviour was measured at pharmacy level. The comparison of the models carried out by the authors is significant for the pharmaceutical industry as decomposing the constructs of normative and behavioural beliefs helped generate additional information towards understanding each factor's influence on behavioural intention and behaviour. The decomposed composite attitude behaviour model proved more helpful, in this instance, than that based on the theory of planned behaviour (Leo and Kangis, 2002). Moreover, when modelling behaviour, it is necessary to evaluate cultural variables. According to Schneider (2002) in today's international markets, problems typically arise if international corporations develop behavior strategies locally and then try to implement them globally. According to the author who has carried out the research, this is justified since advances in transportation and communication have homogenized the middle-class culture to an extent that cultural differences can be neglected in international management. Schneider (2002) state that the interpretation of the simulations suggests the elimination of unified behavior prescriptions in multinational corporations, at least as long they have not been tested for their affective meaning. According to the author, based on the simulations, it can be further speculated that managers who spoil their images by following official, but culturally inappropriate, behavioral guidelines are likely to counterbalance the negative effects with informal, culturally appropriate behavior.

Pharmaceutical strategies in the changing world have to become even more flexible and use various opportunities offered by the marketing mix. Therefore, Rollins et al. (2010) analyses the recent trend in direct-to-consumer advertising has been the increasing presence of non-branded, or help-seeking, ads. In these ads there are not mentioned the products are branded, the only identity is the name of manufacturing firm is the identifier. The results of this research show that subjects who either viewed the non-branded ads or serious type of disease involvement had more positive behavioral intentions. It is significant that intent did not correlate to the predefined behavior. However, those with higher behavioral intentions performed the behavior significantly more. On the basis of the results of the research, it can be concluded that non-branded ads induced greater behavioral intentions, which could lead to more physician discussions and increased information-seeking behavior (Rollins et al., 2010). In addition, according to Singh (2008) the suggested propositions highlight the importance for pharmaceutical companies to leverage resources, bring complementarity in promotional activities and capitalise on the positive word-of-mouth references of physicians to increase the effectiveness of their sales force in influencing physicians.

*Linking between marketing mix strategy, perceived value (mediating effect), and satisfaction (prescription behavior).* There are a number of studies, which analyse the physicians' satisfaction related to, for example, organizational factors (Stevens et al., 1992; Gibson and Borges, 2009; etc.), quality of medicines (Steele et al., 2002) and relationship between the physician and the pharmaceutical sales representative (Clark et al., 2011). However, Singh (2008) notes that influencing physician prescription behaviour has always

proven elusive for pharma companies. This is especially so in these changing times when physicians are tightly pressed for time to spare on attending to sales calls from pharma sales reps. While the individual studies analyze interrelations of indirect impact and satisfaction in various fields of industry and services, there is still a lack of research of this relationship in the area of pharmaceuticals, and in particular the influence of marketing mix strategies on the physicians' prescription behaviour. After evaluation of the indirect impact of perceived value on the relationship between marketing factors and the influence of physicians' satisfaction on the prescription behaviour, the strategies of pharmaceutical companies can become more flexible, as a strong relationship was found among the marketing mix elements and customer satisfaction (Sherwood and Nordstrom, 1998). Therefore, the aim of customer satisfaction and loyalty is an important objective of various companies (Yuan, Wu, 2008; Tarasi et al., 2013), which is pursued through indirect impact or perceived value (Mencarelli and Rivière, 2014). Various studies confirm a strong influence of marketing mix strategies on prescription behaviour of physicians and patients (Basara, 1994; Sagar and Kalaskar, 2012; Obaidat and Al Ghadeer, 2011; Su et al., 2013; etc.), therefore it can be stated that physicians' perception of marketing mix is very high, satisfaction is of a proper level and their relationships with pharmaceutical company or their approach to medicine strengthen. In other words, the mediation effect positively influences physicians' satisfaction.

## 2. Results and discussion

This is an exploratory and explanatory research study that utilizes quantitative methods to analyze collected data. Findings of the study are grounded on pretested, structured questionnaire answered by three hundred and seventy five respondents (mix of graduate and post graduate doctors) of private and public hospitals and general practitioners of Karachi City, moreover, the pharmaceutical personnel (mix of sales and marketing) departments of national and multinational pharmaceutical companies operate in Pakistan. Twenty-five observations were dropped due to incomplete responses and integrity of the data. This resulted in three hundred and fifty respondents to test our predictions. Therefore response rate is almost 93.33% with 159 females and 191 males. Hospitals and pharmaceuticals companies were randomly selected from list of private and public institutions and national and multinational companies. Participants ranged in age from 25 to 65 (mean age = 45.00). On average they have experience (mean experience = 5.70 years).

To test hypothesis, structural equation modelling (SEM) was employed using AMOS 7 software package. As data are normally distributed, maximum likelihood method of estimation was used. Graphical representation of SEM model is presented in Figure 1 illustrating direct path between variables (scientific literatures, promotional material, regular follow up, CMEs & conferences and personalized activities) and prescription behavior and indirect path through medical representative PR & brand image of company/product measures.

Experiments where the effects of more than one factor are considered together are called "factorial experiments" and this effect can be analyzed through factorial ANOVA. Factorial ANOVA also enables us to examine the interaction effect between the factors. An interaction effect is said to exist when differences on one factor depend on the level of other factor. However, it is important to remember that interaction is between factors and not



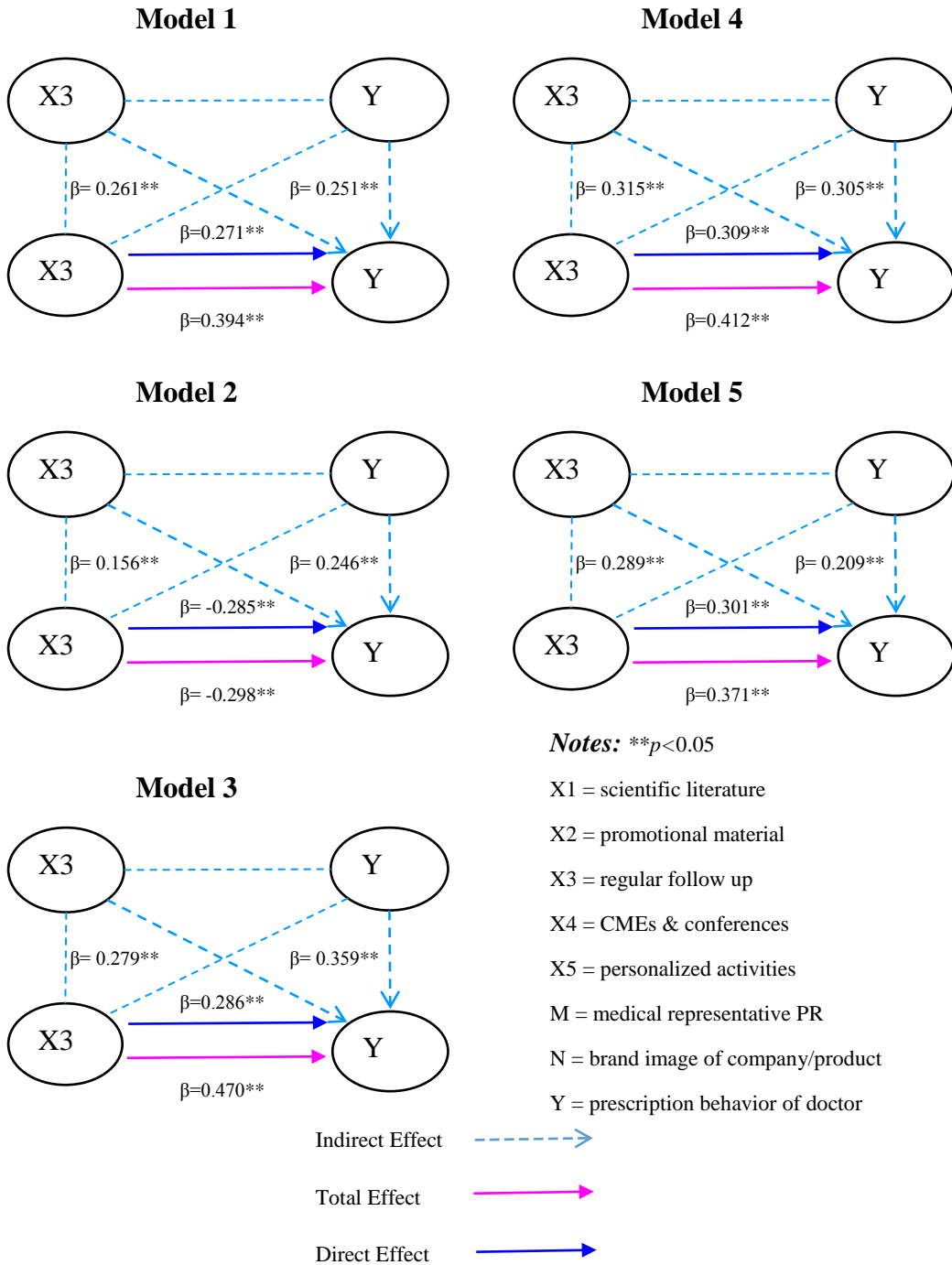
levels. We know that there is no interaction between the factors when we talk about the effect of one factor without mentioning the other factor. The results from factorial ANOVA test all the hypotheses of this model.

*Mediation Evaluation.* Statistical investigation on mediation analysis has produced conflicting opinion based on significance of relationship between independent variable (X) and dependent variable (Y). It is therefore pertinent to understand mediation protocols for hypothesis testing. Baron and Kenny (1986) recommended three steps prior to mediation analysis. First step is testing significant “X to Y” relationship (total effect), second step is to introduce mediators (M & N) and test significant “X to M to Y” and “X to N to Y” relationship (indirect effect). Third step is testing significant “X to Y” relationship incorporating mediators’ effect (Baron and Kenny, 1986).

Arguing this belief, Hayes (2009), MacKinnon et al. (2000; 2002), Shrout and Bolger, (2002) Zhao et al. (2010) propounded that mediation is not constrained by significant “X to Y” relationship. Preacher and Rucker (2007) rejected overemphasized “X to Y” relationship in mediation analysis. According to Preacher and Rucker (2007), appropriate requirement for mediation analysis is significance and magnitude of indirect effect.

*Indirect Effect.* Based on models (Figure no. 2) we test our hypotheses (H2a-H2e) and (H3a-H3e). Dashed path in all models illustrate mediating effect of medical representative PR between factors triggering prescription behaviors and prescription behavior of a doctor. Model 1 (*scientific literatures* → *medical representative PR* → *prescription behavior* and *scientific literatures* → *brand image of company/product* → *prescription behavior*) is significant ( $p < 0.05$ ) with standardized indirect coefficient of 0.261 and 0.251 respectively. Model 2 (*promotional material* → *medical representative PR* → *prescription behavior* and *promotional material* → *brand image of company/product* → *prescription behavior*) also represents significant relationship with standardized indirect coefficient of 0.156 ( $p < 0.05$ ) and 0.246 ( $p < 0.05$ ) respectively.

Model 3 (*regular follow up* → *medical representative PR* → *prescription behavior* and *regular follow up* → *brand image of company/product* → *prescription behavior*) depicts significant relationship with standard indirect coefficient of 0.279 and 0.359 respectively. Model 4 (*CME & conferences* → *medical representative PR* → *prescription behavior* and *CME & conferences* → *brand image of company/product* → *prescription behavior*) shows significant relationship with standardized coefficient of 0.315 and 0.305 respectively. Model 5 (*personalized activities* → *medical representative PR* → *prescription behavior* and *personalized activities* → *brand image of company/product* → *prescription behavior*) depicts significant relationship with standardized coefficient of 0.289 and 0.209 respectively (Table no. 1).



**Figure no. 2: Summary of direct, indirect and total paths through structural equation modelling**

**Table no. 1: Results from Structural Equation Modeling**

	B	BCa 95% Confidence Interval		p
		CI (Lower)	CI (Upper)	
<b>Indirect Effect (Medical Representative PR)</b>				
Scientific literatures†	0.261	0.081	0.192	0.001
Promotional material†	0.156	-0.035	0.178	0.002
Regular follow up†	0.279	0.077	0.325	0.001
CMEs & conferences†	0.315	0.086	0.382	0.002
Personalized activities†	0.289	0.089	0.491	0.002
<b>Indirect Effect (Brand Image of Company/Product)</b>				
Scientific literatures†	0.251	0.091	0.181	0.000
Promotional material†	0.246	0.085	0.192	0.001
Regular follow up†	0.359	0.079	0.295	0.000
CMEs & conferences†	0.305	0.096	0.372	0.003
Personalized activities†	0.209	0.079	0.452	0.000
<b>Direct Effect</b>				
Scientific literatures†	0.271	0.038	0.486	0.003
Promotional material†	-0.285	-0.468	-0.138	0.001
Regular follow up†	0.286	0.074	0.512	0.013
CMEs & conferences†	0.309	0.096	0.562	0.001
Personalized activities†	0.301	-0.242	0.353	0.001
<b>Total Effect</b>				
Scientific literatures†	0.394	0.264	0.702	0.001
Promotional material†	-0.298	-0.411	-0.081	0.001
Regular follow up†	0.470	0.286	0.762	0.001
CMEs & conferences†	0.412	0.313	0.691	0.001
Personalized activities†	0.371	0.138	0.571	0.004

Note: † = predictor, DV = prescription behavior & M= medical representative PR, N = brand image of company/product; n = 350; bootstrapping = 5000 times

*Direct Effect.* Relationships between independent and dependent variable incorporating mediators ( $X_M$  to Y) and ( $X_N$  to Y) is depicted in blue line in all models in Figure 1. All models are statistically significant ( $p < 0.05$ ). Standardized regression weights for model 1, model 2, model 3 model 4 and model 5 are 0.271, -0.285, 0.286, 0.309 and 0.301 respectively.

*Total Effect.*  $H_{1a}$ - $H_{1e}$  depicts significant positive impact of variables ( $X_1$ ,  $X_2$ ,  $X_3$ ,  $X_4$  and  $X_5$ ) on prescription behavior (Y). SEM results confirm total effects in all models are statistically significant ( $p < 0.05$ ) at 95% confidence interval.

Based on SEM results, medical representative PR and brand image of company/product partially mediates the relationship between scientific literatures, regular follow up, CMEs & conferences ( $X_1$ ,  $X_3$  and  $X_4$ ) and prescription behavior (Y). [For  $X_1$ : (total effect=0.394, indirect effect=0.261 & indirect effect=0.251 and direct effect=0.271),  $X_3$ : (total effect=0.470, indirect effect=0.279 & indirect effect=0.359 and direct effect =0.286) and  $X_4$ : (total effect=0.412, indirect effect=0.315 & indirect effect=0.305 and direct effect =0.309)]. It is found that medical representative PR and brand image of company/product

also do mediate relationship between promotional material (X2) and Prescription behavior (*indirect effect*=0.156,  $p<0.05$ ) and (*indirect effect*=0.246,  $p<0.05$ ). Interestingly medical representative PR and brand image of company/product fully mediate between personalized activities (X5) and prescription behavior (*total effect*=0.371, *indirect effect*=0.289 & *indirect effect*=0.209 and *direct effect* =0.301).

**Factorial ANOVA.** The results from Factorial ANOVA test all the hypotheses of this model. If we look at the ANOVA table, we can see that all the independent variables are significant because the  $p<0.05$ . The mediating variables, Medical representative PR is significant ( $F=28.79$ ,  $p=0.000$ ), similarly the brand image of a company/product has also significant effect ( $F=21.28$ ,  $p=0.000$ ).

The results from Factorial ANOVA further conclude that the individual variables, which trigger the prescription behavior, are also statistically significant. As scientific literatures ( $F=12.21$ ,  $p=0.003$ ), promotional material ( $F=23.20$ ,  $p=0.003$ ), regular follow up ( $F=9.71$ ,  $p=0.000$ ), CMEs & conferences ( $F=21.69$ ,  $p=0.001$ ) and personalized activities ( $F=29.90$ ,  $p=0.000$ ) (Table no. 2).

**Table no. 2: Tests of Between-Subjects Effects (Factorial Analysis ANOVA).**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected model	2701.45 <sup>a</sup>	5	540.29	22.47	0.000
Intercept	1897819.544	1	1897819.544	1817.594	0.000
Medical representative PR	2127.637	3	709.212	28.79	0.003
Brand image of company/product	29.616	1	29.616	21.28	0.000
Scientific literature	9692.559	4	2423.140	12.21	0.003
Promotional material	2631.710	1	2631.710	23.20	0.003
Regular Follow up	3042.504	3	1014.168	9.71	0.000
CMEs & conferences	8223.526	4	2055.882	21.69	0.001
Personalized activities	1534.102	3	511.367	29.90	0.000
Error	335168.489	329	1044.139		
Total	2365212.000	350			
Corrected Total	360480.868	349			

\* a. R Squared = 0.572 (Adjusted R Squared = 0.547);

\*\* Dependent variable: prescription behavior of doctor.

## Conclusions

Our analysis surfaces association of various variables (scientific literatures, promotional material, regular follow up, CMEs & conferences, personalized activities) with prescription behavior of physicians. We recognize that all above discussed variables are broad, multifaceted dimensions that reinforce physicians/doctors very strongly to change their prescription pattern. not surprisingly, these variables such as scientific literatures, personalized activities, CMEs and conferences and promotional material spill over into personal PR of medical representative and brand image of company/product that translates into prescription behavior of a physician. Theoretically, these findings are interesting as they establish association between variables (scientific literatures, promotional material,

regular follow up, CMEs & conferences, personalized activities) and prescription behavior of physicians mediated by strong phenomenon of medical representative PR and brand image of a company/product in changing the prescription behavior of physicians. These relationships are logical and useful and demand further investigation by academicians and practitioners.

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